



ROY F. WESTON, INC.  
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708-918-4000

6 April 1992

Ms. Colleen Hart, HSM-5J  
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U.S. Environmental Protection Agency  
77 West Jackson Blvd.  
Chicago, IL 60604



U.S. EPA Contract No.: 68-W8-0089

Work Assignment No.: 45-5JZZ

Document Control No.: 4500-45-AEZD

Subject: Potentially buried munitions at Sanyo Site, Richmond, Indiana

Dear Ms. Hart:

During our site investigation at Sanyo, WESTON found a number of references indicating that this site could have buried munitions. This plant was operated from the 1930s to mid-1970s by AVCO (also referred to in the records as Crosley). AVCO manufactured under a military contract to produce grenades, small arms, guidance mechanisms for Polaris missiles and gun sights. Historical aerial photographs for 1986 show what looks like former bunkers to the east of the plant in a landfilled area that WESTON proposes to sample. Also the landfilled areas to the north of the plant may contain buried ordnance.

The potential for buried ordnance poses safety concerns for field personnel during soil sampling at the site. WESTON proposes to sample the soils or waste at the landfill at shallow depths (1-3 feet) using a hand auger or portable power auger. Even though the proposed sampling depths are shallow, there is still the potential risk for encountering ordnance. Therefore, WESTON would like to use limited geophysical investigation to screen the areas where soil sampling is planned for metal objects before actual sampling.

The following is a description of the special equipment required for the screening. In order to delineate the sampling area for ferrous ordnance, the use of a specific magnetometer is necessary. This magnetometer, V-92, can detect explosive ordnance. This instrument provides the capability to detect buried ferrous ordnance with nominal pseudo warning rates.

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The V-92 is characterized by its capacity for "sweeping action" in the field; its design for rapid coverage of territory; its real-time indication of magnetic field changes and sensitivity adjustments for different site characteristics.

The specifications of the V-92 magnetometer is included as Attachment A.

The V-92 magnetometer has been selected over other metal detecting techniques because the V-92 does not induce an electromagnetic field over an area of investigation. Theoretically, the affects of an induced electromagnetic field can be detrimental, in that it can cause ordnance to detonate.

Mr. Tony Holoska of U.S. EPA's Technical Support Section was contacted on 27 March 1992 and was informed that U.S. EPA has a EGG Geometric G8-56 magnetometer. This magnetometer cannot be used as an explosive ordnance detector. WESTON contacted several other vendors in the USA but could not locate a vendor who can provide this equipment. As far as WESTON is able to determine, Scintrex Corp., Concord, Ontario (Canada) is the only supplier of this equipment. Scintrex Corp.'s rental rate is effective from the time the instrument leaves their facility until the time the equipment is received back at their facility. WESTON anticipates a maximum of three day rental charge (to account for rental during transit of the equipment) of which one day will be the use of the equipment at the site. Only one day's use will be required, as the screening will only be done at the selected sample locations. If large amounts of metallic objectives are encountered during screening, their locations and extent will be carefully noted for future investigations.

WESTON has included an estimate of the cost for the geophysical investigation at the Sanyo site in Table 1. WESTON requests an evaluation of the need to perform a limited geophysical investigation prior to soil sampling at the Sanyo site as discussed in this letter. WESTON also needs an authorization to incur the additional cost as indicated in Table 1.

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If you have any questions or require additional clarification, please call.

Very truly yours,

ROY F. WESTON, INC.

A handwritten signature in cursive script that reads "Glenn A. Brooks".

Glenn A. Brooks  
Geophysicist

A handwritten signature in cursive script that reads "P. Krishnan".

P. Krishnan, Ph.D., P.E.  
Site Manager

GAB/PK/ieh

cc: Mr. S. Nathan, Project Officer, U.S. EPA, HSM-5J  
Ms. B. Manzke, Contracting Officer, U.S. EPA, MCC-10J

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Table 1

Geophysical Investigation Cost  
Sanyo E&E Corporation  
Richmond, Indiana

Equipment	Items	Cost, \$	Subtotal, \$
V-92 Explosive Ordnance Detector Magnetometer	Rental/Three days	\$100/day	\$300
Duty	Canadian Origin	600	600
Shipping	Priority Overnight	500	500
Total Rental			\$1,400
Labor & Expenses		Hours	Subtotal \$
Geophysicist for equipment check, mobilization, data acquisition and preparation of a letter report		20 hours	\$935
Site Manager		2 hours	210
Expenses for travel to site (gas, toll, per diem)			100
Total			\$2,645

Note: Labor includes overhead, G&A and base fee.

**ATTACHMENT A**

**SPECIFICATIONS V-92 MAGNETOMETER**

## SPECIFICATIONS

Range	20,000–100,000 gammas	Tone Frequency	Approximately 7 pulses per second to 10 kHz manually set
Sensor Orientation	Optimum angle 45° between Sensor Head axis and total magnetic field vector. Active zone of operation 15° –75° and 105° –165°	Audio Information	Continuous and instantaneous. Approximately 7 Hz change in tone per 1 gamma change in total field intensity.
Sensitivity	± 1 gamma	Power Supply	Rechargeable batteries
Visual Readout	5 digit, 0.3 inch high 7-segment Incandescent display	Operating Time	6 hours under moderate conditions 4 hours at –35° C with batteries worn under the outer garment
Measurement Time	Approximately 45 ms	Operating Environment	–35° C to +50° C Sensor: 30 feet of water immersion Readout: 3 feet of water immersion
Measurement Rate	About 11 times per second		
Display Time	0.54 second (Optional—0.27, 0.36, 0.45, 0.63, 0.71 sec)		
Audio Output	Via speaker or headphones	Storage Temperature	–40° +55° C

## DIMENSIONS AND WEIGHT

Sensor—staff:	50 inches (1270 mm)	Battery Charger:	8 x 4.75 x 6 inches (203 mm x 121 mm x 153 mm) 6.5 pounds (3 kg)
Readout:	7 x 4 x 10 inches (178 mm x 102 mm x 250 mm) 5.75 pounds (2.6 kg)	Packaging Option	1. Carrying Case 43 x 25 x 11 inches (1093 mm x 625 mm x 280 mm) Approximately 65 pounds (26 kg)
Battery Pack:	14 x 6 x 2 inches (356 mm x 153 mm x 59 mm) 11 pounds (5 kg)	Packaging Option	2. Has a systems case and accessories case (for dimensions and weight data please inquire VCI for further details)
Specifications subject to change without notice.			